

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): A single-crystal lithium fluoride doped with at least 0.018 mol per kg of a divalent positive ion M present in the fluoride state.

Claim 2 (Currently Amended): The fluoride as claimed in ~~the preceding~~ claim 1, characterized in that the ionic radius of divalent M ranges from 55 to 80 picometers.

Claim 3 (Currently Amended): The fluoride as claimed in ~~the preceding~~ claim 2, characterized in that M is present in an amount of at least 0.02 mol/kg.

Claim 4 (Currently Amended): The fluoride as claimed in ~~the preceding~~ claim 3, characterized in that M is present in an amount of at least 0.023 mol/kg.

Claim 5 (Currently Amended): The fluoride as claimed in ~~the preceding~~ claim 4, characterized in that M is present in an amount of at least 0.025 mol/kg.

Claim 6 (Currently Amended): The fluoride as claimed in ~~one of the preceding~~ ~~claims~~ claim 1, characterized in that M is present in an amount of at most 0.082 mol/kg.

Claim 7 (Currently Amended): The fluoride as claimed in ~~the preceding~~ claim 6, characterized in that M is present in an amount of at most 0.045 mol/kg.

Claim 8 (Currently Amended): The fluoride as claimed in ~~one of the preceding~~ ~~claims~~ claim 1, characterized in that M is Mg^{2+} .

Claim 9 (Currently Amended): The fluoride as claimed in ~~one of claims 1 to 7~~ claim 1, characterized in that M is Co^{2+} .

Claim 10 (Currently Amended): The fluoride as claimed in ~~one of claims 1 to 7~~ claim 1, characterized in that M is Zn^{2+} .

Claim 11 (Currently Amended): The fluoride as claimed in ~~one of claims 1 to 7~~ claim 1, characterized in that M is a mixture of at least two ions chosen from the group consisting of Mg^{2+} , Zn^{2+} and CO^{2+} .

Claim 12 (Currently Amended): The fluoride as claimed in ~~one of the preceding claims~~ claim 1, characterized in that it is in the form of a cube or parallelepiped.

Claim 13 (Currently Amended): The fluoride as claimed in ~~one of the preceding claims~~ claim 1, characterized in that its volume ranges from $2.5 \times 10^{-3} \text{ cm}^3$ to 30 cm^3 .

Claim 14 (Currently Amended): The fluoride as claimed in ~~the preceding~~ claim 13, characterized in that its volume ranges from 0.01 to 20 cm^3 .

Claim 15 (Currently Amended): The fluoride as claimed in ~~one of the preceding claims~~ claim 1, characterized in that it has a cleaved surface.

Claim 16 (Currently Amended): The fluoride as claimed in ~~one of the preceding claims~~ claim 1, characterized in that it has a lapped surface that is then treated in acid medium or polished.

Claim 17 (Currently Amended): An analytical machine that includes a monochromator made of a fluoride ~~of one of the preceding claims~~ as claimed in claim 1.

Claim 18 (Currently Amended): The machine as claimed in ~~the preceding claim 17~~, characterized in that it includes at least one scintillator containing a rare-earth halide.

Claim 19 (Currently Amended): The machine as claimed in ~~the preceding claim 18~~, characterized in that the rare-earth halide is CeCl₃-doped LaCl₃ or CeBr₃-doped LaBr₃.

Claim 20 (Currently Amended): A method of analysis for an element of a specimen using a machine as claimed in ~~one of the preceding machine claims~~ claim 17, characterized in that the scintillator is locked onto a line having a wavelength of less than 3 Å.

Claim 21 (Currently Amended): The method as claimed in ~~the preceding claim 20~~, characterized in that the scintillator is locked onto a line having a wavelength of less than 2 Å.

Claim 22 (Currently Amended): The method as claimed in ~~the preceding claim 21~~, characterized in that the scintillator is locked onto a line having a wavelength of less than 1.5 Å.

Claim 23 (Currently Amended): ~~The use~~ A method of using as monochromator a fluoride as claimed in ~~one of the preceding fluoride claims as monochromator~~ claim 1.